TABLE 3.—*Maximum free-air wind velocities (m. p. s.) for different sections of the United States, based on pilot-balloon observations during November 1938*

Section	Surface to 2,500 meters (m. s. l.)					Between 2,500 and 5,000 meters (m. s. l.)					Above 5,000 meters (m. s. l.)				
	Maximum velocity	Direction	Altitude (m), m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m), m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m), m. s. l.	Date	Station
Northeast [1]	45.3	W	1,940	13	Cleveland, Ohio	44.2	W	3,040	13	Cleveland, Ohio	43.2	W	5,800	20	Syracuse, N. Y.
East-Central [2]	55.8	WNW	2,500	14	Washington, D. C.	69.1	WNW	2,620	14	Washington, D. C.	50.0	WSW	8,200	22	Nashville, Tenn.
Southeast [3]	30.5	NNW	1,780	24	Spartanburg, S. C.	44.4	WSW	4,350	26	Atlanta, Ga.	48.8	WSW	6,150	25	Atlanta, Ga.
North-Central [4]	49.1	W	820	14	Detroit, Mich.	47.0	W	2,630	13	Detroit, Mich.	62.0	SW	8,570	3	Fargo, N. Dak.
Central [5]	43.0	SSE	2,080	12	Chicago, Ill.	46.0	SW	5,000	12	Wichita, Kans.	57.6	WSW	9,560	5	Wichita, Kans.
South-Central [6]	38.0	NNW	2,470	24	Ft. Worth, Tex.	48.0	WNW	4,630	7	Abilene, Tex.	55.0	WSW	7,570	13	Oklahoma City, Okla.
Northwest [7]	35.8	W	1,940	15	Havre, Mont.	44.2	N	4,820	18	Medford, Oreg.	57.6	NNW	9,820	5	Medford, Oreg.
West-Central [8]	32.2	WNW	2,480	30	Cheyenne, Wyo.	51.8	WSW	4,320	8	Reno, Nev.	66.0	NNW	6,430	17	Modena, Utah.
Southwest [9]	34.7	NNW	2,110	2	Burbank, Calif.	51.5	W	5,000	1	Las Vegas, Nev.	90.0	WSW	12,020	14	Winslow, Ariz.

[1] Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.
[2] Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.
[3] South Carolina, Georgia, Florida, and Alabama.
[4] Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.
[5] Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.
[6] Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.
[7] Montana, Idaho, Washington, and Oregon.
[8] Wyoming, Colorado, Utah, northern Nevada, and northern California.
[9] Southern California, southern Nevada, Arizona, New Mexico, and extreme west Texas.

RIVERS AND FLOODS

[River and Flood Division, MERRILL BERNARD in charge]

By BENNETT SWENSON

No floods occurred during November 1938 with the exception of a flood in the Chippewa River from the 6th to the 9th. This flood resulted from heavy rainfall during the first week of November averaging more than 3 inches over the basin. The river crested at Durand, Wis., at 4 p. m. of the 7th with a stage of 13.0 feet, 2 feet above flood stage. The damage caused by this overflow is estimated at about $5,000.

WEATHER ON THE ATLANTIC AND PACIFIC OCEANS

[The Marine Division, I. R. TANNEHILL in charge]

NORTH ATLANTIC OCEAN, NOVEMBER 1938

By H. C. HUNTER

Atmospheric pressure.—Pressure averaged much lower than normal over north-central and northeastern regions, the mean at Reykjavik, Iceland, being 0.4 inch less than the normal. The center of the Icelandic low-pressure area lay to the eastward of the average November location. The southeastern area averaged above normal pressure, with notably high readings constantly from the 12th onward to the end of the month. At the Azores, pressure averaged about normal, low readings from the 3d to the 14th being balanced by higher readings after the latter date.

The western North Atlantic had pressure moderately above normal to northward of latitude 30°, but over the Greater Antilles pressure averaged a little below normal, the first 12 days of the month being marked by readings quite low for the latitude.

The extremes of pressure among dependable vessel reports at hand are 30.71 and 28.40 inches. The higher reading was recorded not far to southwestward of the western Azores during the forenoon of the 28th by the Dutch steamship *Amsterdam*. The low mark was noted on the American steamship *Black Gull*, about 4 p. m. of the 11th, close to 49° N., 37° W.

Table 1 shows that the island station at Reykjavik had pressure slightly lower than the low mark mentioned, the date of occurrence being the 27th. Furthermore, a reading of 28.10 inches, uncorrected, has been reported from the North Sea, not far from Tynemouth, England, noted during the 23d on the British steamship *Lunula*.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, November 1938*

Station	Average pressure	Departure	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Julianehaab, Greenland	29.41	−0.15	30.00	6	28.72	15
Reykjavik, Iceland	29.22	−.40	29.86	9	28.38	27
Lerwick, Shetland Islands	29.38	−.32	30.33	15	28.50	1
Valencia, Ireland	29.66	−.23	30.18	15	28.73	23
Lisbon, Portugal	30.21	+.17	30.45	17	29.77	10
Madeira	30.14	+.13	30.36	29	29.80	8
Horta, Azores	30.15	+.02	30.58	28	29.38	9
Belle Isle, Newfoundland	29.83	+.06	30.36	27	28.90	14
Halifax, Nova Scotia	30.08	+.13	30.62	26	29.26	27
Nantucket	30.12	+.07	30.57	3	29.15	25
Hatteras	30.18	+.07	30.47	29	29.59	24
Bermuda	30.17	+.09	30.36	6	29.98	1
Turks Island	29.95	−.04	30.10	14	29.71	7
Key West	30.01	−.01	30.26	28	29.74	8
New Orleans	30.15	+.05	30.62	28	29.77	18

NOTE.—All data based on a. m. observations only with departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

Cyclones and gales.—November lived up to its reputation for being a stormy month over the North Atlantic. While most of the reports of winds of very great force come from northern waters east of the 50th meridian, yet there are interesting features to be noted of cyclones that occurred near American or West Indian shores.